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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,473	10/03/2003	Akira Sekiguchi	402812	8505
23548	7590	08/18/2004	EXAMINER	
LEYDIG VOIT & MAYER, LTD 700 THIRTEENTH ST. NW SUITE 300 WASHINGTON, DC 20005-3960			SEVER, ANDREW T	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/677,473

Applicant(s)

SEKIGUCHI ET AL.

Examiner

Andrew T Sever

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/14/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. In view of the papers filed 4/14/2004, it has been found that this nonprovisional application, as filed, through error and without deceptive intent, improperly set forth the inventorship, and accordingly, this application has been corrected in compliance with 37 CFR 1.48(a). The inventorship of this application has been changed by the deletion of Junichi Nishimae and the addition of Tetsuo Sato.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of Office records to reflect the inventorship as corrected.

Drawings

2. Figures 10A and 11A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Bierhuizen et al. (US 2003/0214617.)

Bierhuizen teaches in figure 6 a lamp comprising:

An illuminant section having an illuminant (28, specified in paragraph 38 to be an arc lamp) for radiating light, having a size determined by an arc length and direction of the arc length along an optical axis of the lamp, the illuminant having a center point (as clearly can be seen the direction of the arc length is along the optical axis of the lamp, further it is inherent that illuminant section would be designed around the size of the arc lamp.);

A lamp reflector for condensing light flux emitted from the center point of the illuminant, the reflector being an ellipsoid of revolution about the optical axis and the center point of the illuminant being located at an ellipsoidal focus of the lamp reflector and on the optical axis (paragraph 63 teaches that the reflector is 138 is aspheric and in paragraph 52 it is taught that for another preferred embodiment it is ellipsoidal with the arc lamp mounted at the first focus, and it should be noted that ellipsoidal reflectors are aspheric); and

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A lamp front glass (140) having a plate-shaped incident surface and a plate-shaped outgoing surface, for receiving the light flux reflected by the lamp reflector through the incident surface and outputting the light flux through the outgoing surface, wherein

The ellipsoid of revolution of the lamp reflector is a deformed aspherical reflection surface, which has a rotational symmetry about the optical axis (by inspection the reflector has rotational symmetry),

At least one of the incident surface and the outgoing surface of the lamp front glass a deformed aspherical lens surface which has a rotational symmetry about the optical axis (again by inspection), and

A different power for each radiation direction is applied by the aspherical reflection surface and the aspherical lens surface, suppressing distribution of divergence angles of the light flux at the outgoing surface of the lamp front glass (Bierhuizen teaches in paragraph 63 that the combination of the lens and reflector is to focus the light onto a point with minimal overfill (suppression of distribution of divergence angles) or to completely eliminate it).

With regards to applicant's claim 2:

Since Bierhuizen teaches that the lamp front glass achieves minimal overfill and can completely eliminate it, especially in the case of completely eliminating it the divergence angles would be constant.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Bierhuizen as applied to claims 1 and 2 above, and further in view of Levis et al. (US 5,884,991.)

As explained in more detail above, Bierhuizen teaches a lamp comprising an illuminant section having an illuminant for radiating light, a lamp reflector which is an ellipsoid of revolution and the illuminant is located at an ellipsoidal focus, and a lamp front glass. The ellipsoid of revolution of the lamp reflector is a deformed aspherical reflection surface with rotation symmetry about the optical axis. The lamp front glass has a surface, which is also a deformed aspherical lens surface, which has a rotational symmetry about the optical axis. A different power for each radiation direction is applied by the aspherical reflection surface and the aspherical lens surface suppressing distribution of divergence angles of the light flux at the outgoing surface of the lamp front glass.

Bierhuizen does not teach specifically an integrator optical system and condensing optical system, wherein the integrator optical system has a square pole shape having an incident plane and an outgoing plane with a rectangular shape. Levis teaches such a system in figure 2. Levis teaches an illuminant (1), an elliptical reflector (2), a square integrator optical system 3, which further has a mirror system at its incident

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aperture which is larger than that of the outgoing aperture similar to that shown in applicant's figure 18A. Lewis teaches in column 4 lines 47-61 that this integrator in combination with the elliptical reflector produces a reduction in the angle population of the outgoing beam and reduces the physical length of the light engine both of which are useful. Accordingly it would be obvious to one of ordinary skill in the art at the time the invention was made to use the integrator optical system of Lewis in a projection system as taught by Bierhuizen (although not claimed in applicant's claims 1 and 2, Bierhuizen teaches a lamp in a projection system which does include in some embodiments a condensing optical system.)

With regards to applicant's claims 5 and 7:

Lewis teaches in figure 2 a relay lens 6 (relay optical system), a light modulation means which is an LCD (7) as claimed in applicant's claim 7, and a projection lens.

With regards to applicant's claim 6:

Although neither Lewis nor Bierhuizen specifically teaches a optical modulation element which includes a plurality of mirrors (DMD), DMD's and LCD's are considered interchangeable as evidenced US 6,205,271 to Bowron et al. which both teaches in column 1 lines 10-23, US 2003/0063261 to Li which teaches in paragraph 46 all three types of modulators (LCOS, DMD, and LCDs.) Accordingly given it is well known to exchange reflective LCDs (as taught by Bierhuizen) with DMDs as they are interchangeable and chosen for economic and other reasons outside the scope of the

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present invention, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a DMD in the display system of Bierhuizen in view of Levis.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

US 6,464,362 to Sugawara et al. teaches in figure 6 a display system having a lamp with a lamp front glass (15).

US 6,231,193 to Sugawara teaches alternative means of overcoming the problems that the present invention solves.

US 4,457, 600 to Hall teaches an aspheric lamp front glass in figure 1.

US 2002/0075460 to Kappel et al. teaches that elliptical and parabolic reflectors are both used in combination with light integrators and other aspects of the present invention.

US 2004/0021827 to Sekiguchi et al. which is a co-pending application. Applicant should review this application before making any amendments in order to avoid double patenting.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'David Gray', with a large, loopy flourish extending to the right.

David Gray
Primary Examiner

AS